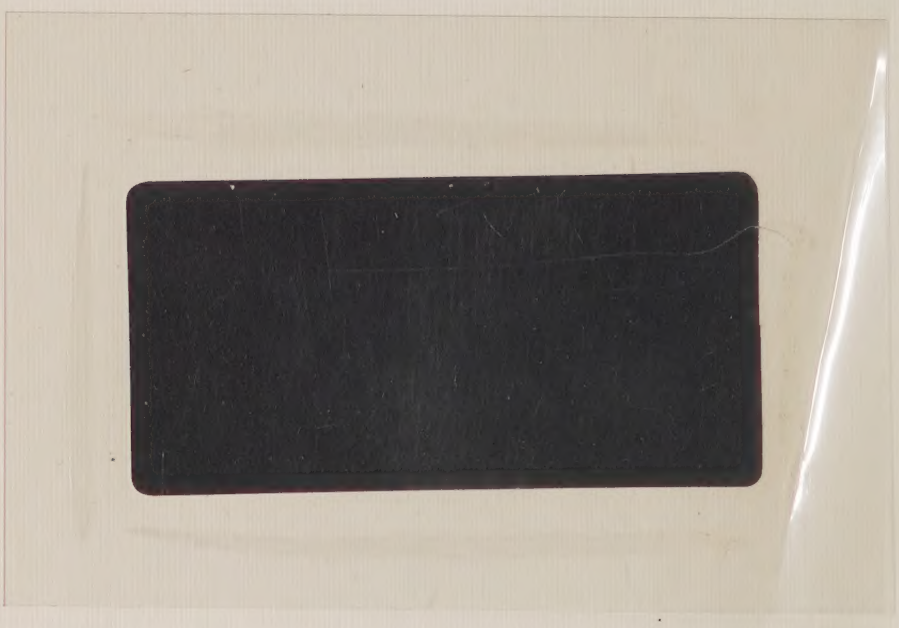
MICROWAVE SYSTEM ANALYZER

ME453B/ME538B

Anritsu

MP MASTER

MA35819



MICROWAVE SYSTEM ANALYZER

ME453B/ME538B

ANRITSU ELECTRIC CO.,LTD.

TOKYO, JAPAN

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MANUAL CHANGE

OF

MICROWAVE SYSTEM ANALYZER ME538B,453B

FOR 55.556 kHz BB SIGNAL

1. GENERAL

As requested, the Microwave System Analyzer ME538B changes the BB frequency as follows:

change: BB Frequency 555.556 kHz → 55.556 kHz

2. PRECAUTIONS ON HANDLING

When using the 55.556 kHz signal to measure a communication satellite, confirm the following items:

Item	Remarks	
(1) Measurement of a signal with small C/N ratio	Use the THRESHOLD EXTENSION function.	See pages 3 and 22 of Operation Manual
(2) Reduction of noise on the CRT	Use the normalizer function.	
(3) FM deviation of the IF measurement signal	Approximately 50 kHz rms is desirable.	See page 22 of Operation Manual

3. 55.6 kHz BB FREQUENCY SPECIFICATION

3.1 Measurements

Group Delay	Inherent Slope	70 ± 10 MHz: 5 nS 140 ± 10 MHz: 5 nS
	Measuring Range	0 to 400 nS
	Noise	1 nS Condition Deviation 50 kHz rms, using average function
Linearity	Inherent Slope	70 ± 10 MHz: 0.5% 140 ± 10 MHz: 0.5%
	Measuring Range	0 to 80%
	Noise	0.1% Condition Deviation 50 kHz rms, using average function

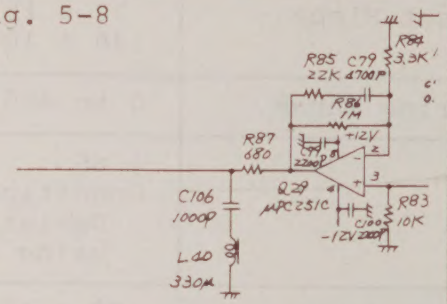
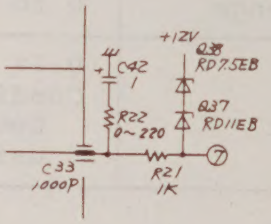
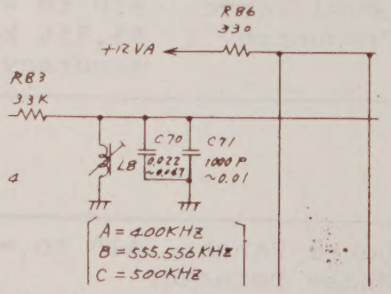
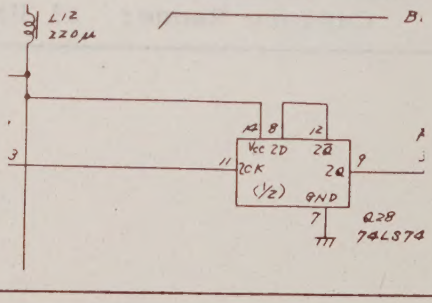
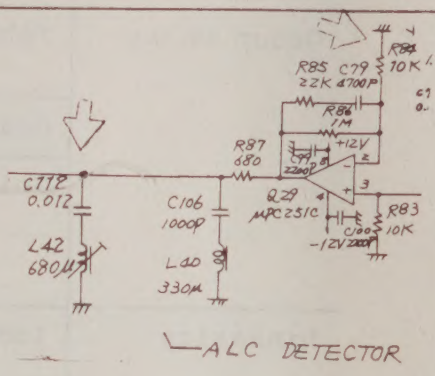
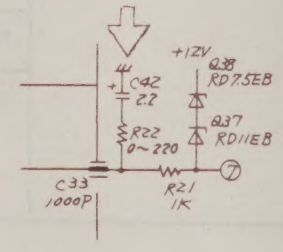
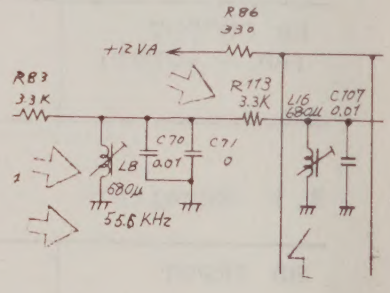
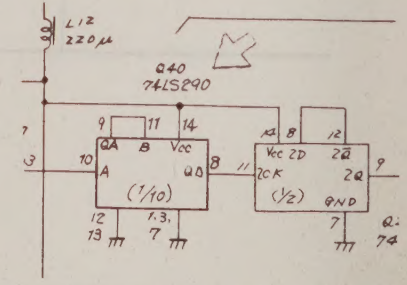
3.2 Transmitter

BB OUTPUT (BB + SWEEP)	Level Range: +10 to -50 dBm Frequency : 55.556 kHz accuracy = ±1 Hz

3.3 Receiver

BB INPUT	Level Range: +10 to -50 dBm Phase Detector Capture Range: ±1 Hz

4. CHANGE INFORMATION

ITEM	DESCRIPTION	
	BB FREQUENCY: 555.556 kHz	BB FREQUENCY: 55.556 kHz
Drawings	Fig. 5-8 1)  2)  Fig. 5-14 B LOW FREQUENCY OSCILLATOR 1)  2)  	  B LOW FREQUENCY OSCILLATOR  

ITEM	DESCRIPTION	
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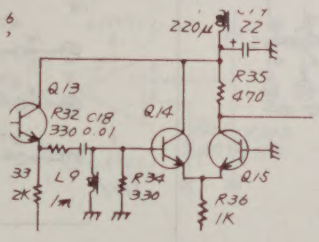
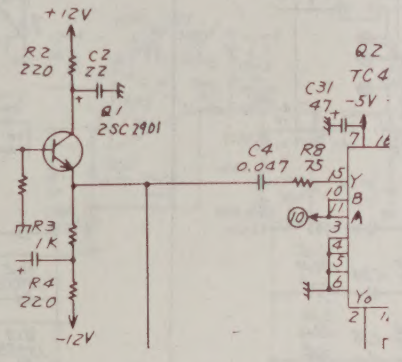
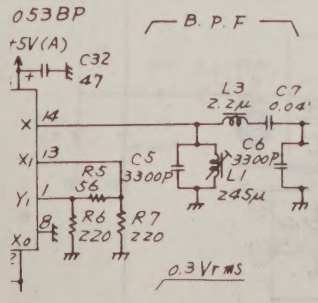
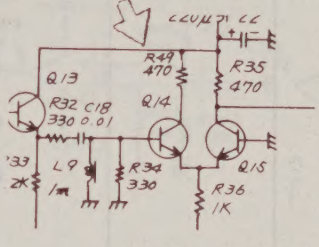
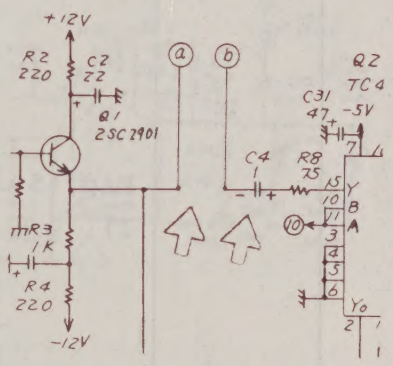
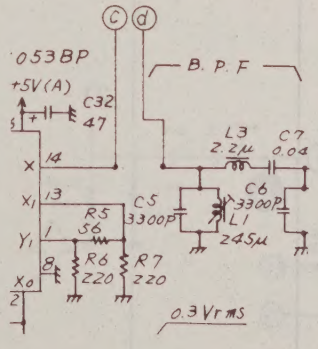
Drawings	Fig. 5-34 1)  2)  3) 	  

ITEM	DESCRIPTION	
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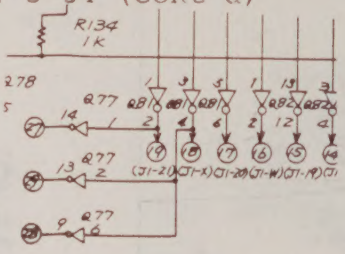
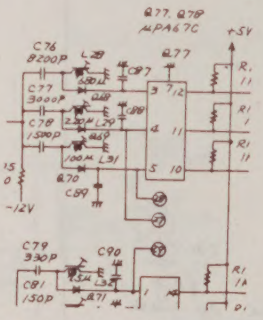
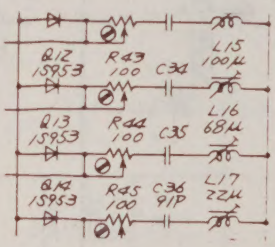
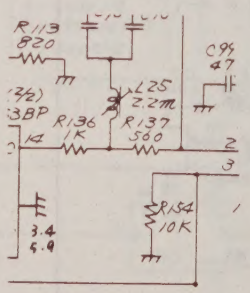
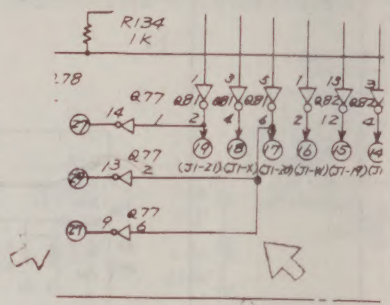
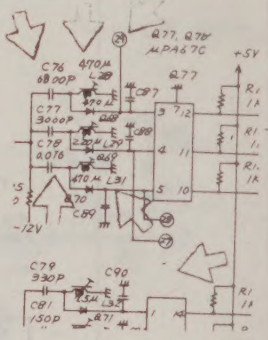
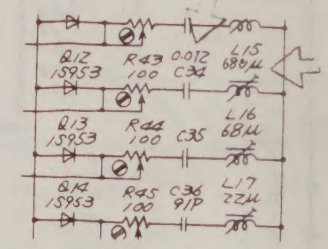
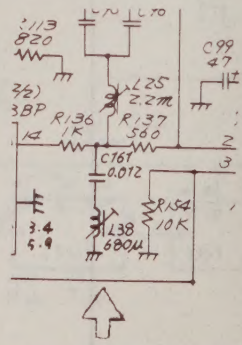
Drawings	Fig. 5-34 (Cont'd) 4)  5)  Fig. 5-38 1)  2) 	   

ITEM	DESCRIPTION	
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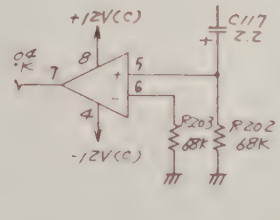
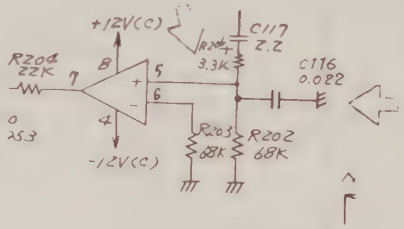
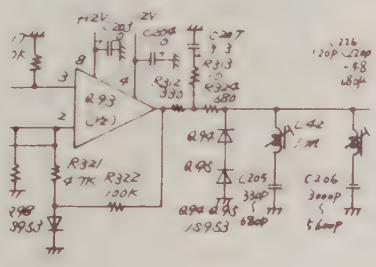
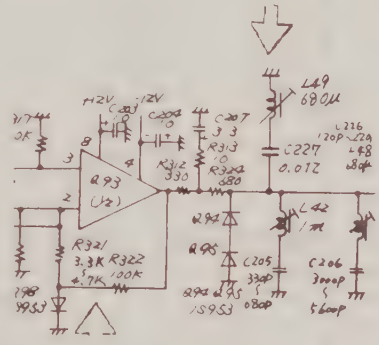
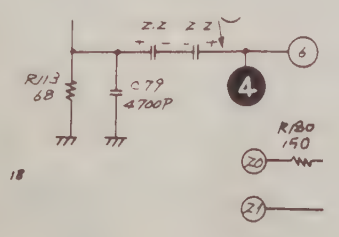
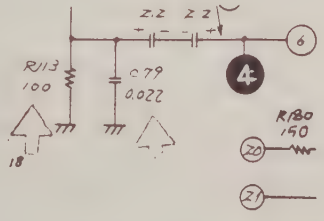
Drawings	Fig. 5-38 (Cont'd) 3)  	
	Fig. 5-40 	
	Fig. 5-42 1)  	

ITEM	DESCRIPTION	
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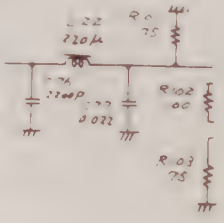
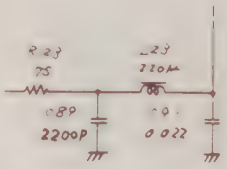
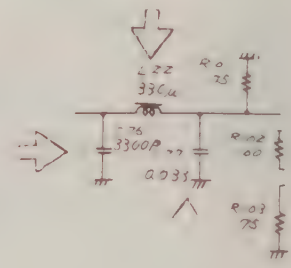
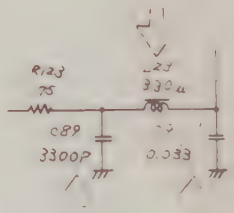
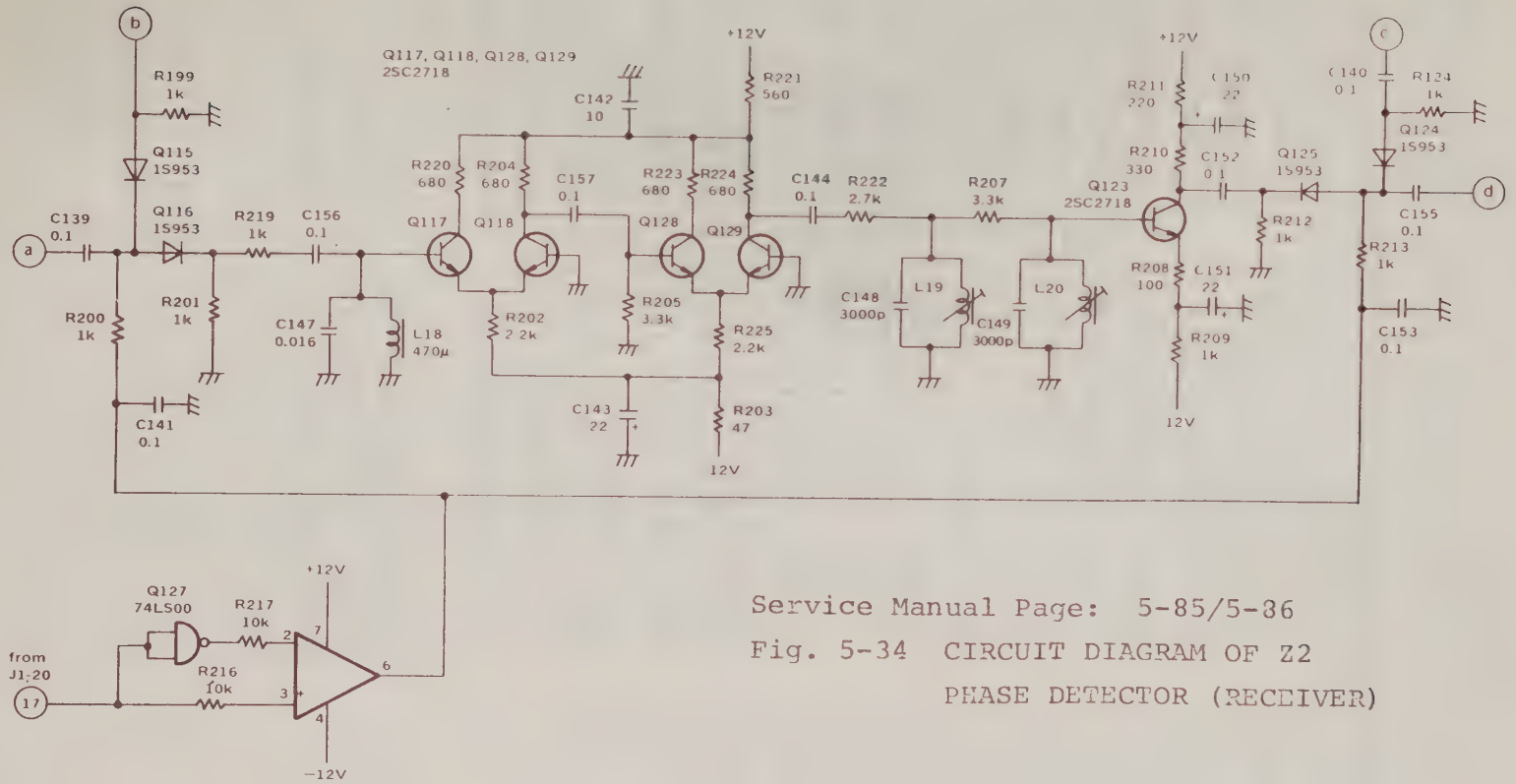
Drawings	Fig. 5-42 (Cont'd) 2)  3) 	 
Component List	Table 6-2 C42 Elect, (CE04W1J1R0) 1uF, ±20%, 63V C112 added L42 added R84 CF, (ARD25T332J) 3.3kΩ, ±5%, 1/4W Table 6-4 C51 Elect, (CE04W1V100) 10uF, ±20%u 35V Table 6-5 C70 Plast, (ECQ-M1H*KZ) 0.022u to 0.047uF, ±10%, 50V C71 Plast, (ECQ-M1H*KZ) 1000pF to 0.01uF, ±10%, 50V	C42 Elect, (CE04W1J2R2) 2.2uF, ±20%, 63V C112 Plast, (ECQ-P1123FZ) 0.012uF, ±1%, 50V L42 Microinductor, (LV2-681) 680uH R84 CF, (ARD25T103J) 10kΩ, ±5%, 1/4W C51 Elect, (CE04W1V220) 22uF, ±20%, 35V C70 Plast, (ECQ-M1H103KZ) 0.01uF, ±10%, 50V C71 Not assigned

ITEM	DESCRIPTION	
	BB FREQUENCY: 555.556 kHz	BB FREQUENCY: 55.556 kHz
Component List	Table 6-5 C107 added R111 R112 and R113 added	C107 Plast,(ECQ-M1H103KZ) 0.01μF, ±10%, 50V R111 Not assigned R112 Not assigned R113 CF, (ARD25T332J) 3.3kΩ, ±5%, 1/4W
	Table 6-13 C4 Plast, (ECQ-M1H473KZ) 0.047μF, ±10%, 50V	C4 Elect, (CE04W1J1R0) 1μF, ±20%, 63V
	C76 Plast, (ECQ-P1 822FZ) 8100pF, ±1pF, 50V	C76 Plast, (ECQ-P1682FZ) 6800pF, ±1pF, 50V
	C78 Plast, (ECQ-P1 152FZ) 1500pF, ±1pF, 50V	C78 Plast, (ECQ-P1163FZ) 0.016μF, ±1pF, 50V
	L28 Var. coil, (LV2-681) 680μH	L28 Var, coil, (LV2-471) 470μH
	L31 Var. coil, (LV2-101) 100μH	L31 Var, coil, (LV2-471) 470μH
	R49 Not assigned	R49 CF, (ARD25T471J) 470Ω, ±5%, 1/4W
	R124 CF, (ARD25T332J) 3.3kΩ, ±5%, 1/4W	R124 CF, (ARD25T102J) 1kΩ, ±5%, 1/4W
	Table 6-15 C34 Plast, (ECQ-P1 132FZ) 1300pF, ±1%, 50V A type Cer, (RPE111CH812G50) 820pF, ±2%, 50V B type Plast, (ECQ-M1H102KZ) 1000pF, ±10%, 50V C type	C34 Plast, (ECQ-P1123FZ) 0.012μF, ±1%, 50V

ITEM	DESCRIPTION	
	BB FREQUENCY: 555.556 kHz	BB FREQUENCY: 55.556 kHz
Component List	Table 6-15	
	C116 Not assigned	C116 Plast,(ECQ-M1H223KZ) 0.022μF, ±10%, 50V
	C161 added	C161 Plast, (ECQ-P1123FZ) 0.012μF, ±1%, 50V
	L15 Var, coil, (LV1-101) 100μH	L15 Var, coil, (LV2-681) 680μH
	L38 added	L38 Var, coil (LV2-681) 680μH
	R206 Not assigned	R206 CF, (ARD25T332J) 3.3KΩ, ±5%, 1/4W
	Table 6-16	
	C227 added	C227 Plast,(ECQ-P1 123FZ) 0.012μF, ±1%, 50V
	L49 added	L49 Var. coil, (LV2-681) 680μH
	R321 CF, (ARD25T472J) 4.7kΩ, ±5%, 1/4W	R321 CF, (ARD25T*J) 3.3K to 4.7KΩ, ±5%, 1/4W
	Table 6-17	
	C79 Plast, (ECQ-M1H472KZ) 4700pF, ±10%, 50V	C79 Plast,(ECQ-M1H223KZ) 0.022μF, ±10%, 50V
	C89 Plast, (ECQ-M1H 222KZ) 2200pF, ±10%, 50V	C89 Plast,(ECQ-M1H332KZ) 3300pF, ±10%, 50V
	L22 Microinductor, (LF8-101K) 100μH	L22 Microinductor, (FS0810-331K) 330μH
	L23 Microinductor, (LF8-101K) 100μH	L23 Microinductor, (FS0810-331K) 330μH
	R113 CF, (ARD25T 680J) 68Ω, ±5%, 1/4W	R113 CF, (ARD25T 101J) 100Ω, ±5%, 1/4W



Service Manual Page: 5-85/5-86

Fig. 5-34 CIRCUIT DIAGRAM OF Z2
PHASE DETECTOR (RECEIVER)

* Service Manual Page: 6-22 - 6-24.

Added the following components in Table 6-13.

C139	Cer, (CK924C1H104M)	0.1μF, ±10%, 50V
C140	Cer, (CK924C1H104M)	0.1μF, ±10%, 50V
C141	Cer, (CK924C1H104M)	0.1μF, ±10%, 50V
C142	Elect, (CE04W1V100)	10μF, ±20%, 35V
C143	Elect, (CE04W1V220)	22μF, ±20%, 35V
C144	Cer, (CK924C1H104M)	0.1μF, ±10%, 50V
C145	Not assigned	
C146	Not assigned	
C147	Plast, (ECQ-P1163FZ)	0.016μF, ±1%, 50V
C148	Plast, (ECQ-P1302FZ)	3000pF, ±1%, 50V
C149	Plast, (ECQ-P1302FZ)	3000pF, ±1%, 50V
C150	Elect, (CE04W1J2R2)	2.2μF, ±20%, 63V
C151	Elect, (CE04W1J2R2)	2.2μF, ±20%, 63V
C152	Cer, (CK924C1H104M)	0.1μF, ±10%, 50V
C153	Cer, (CK924C1H104M)	0.1μF, ±10%, 50V
C154	Not assigned	
C155	Cer, (CK924C1H104M)	0.1μF, ±10%, 50V
C156	Cer, (CK924C1H104M)	0.1μF, ±10%, 50V
C157	Cer, (CK924C1H104M)	0.1μF, ±10%, 50V
L18	Coil, (FS0810S-471K)	470μH
L19	Var, coil (LV1-101)	100μH
L20	Var, coil (LV1-101)	100μH

Q115	Di, Si, (1S953)	
Q116	Di, Si, (1S953)	
Q117	Tr, Si, NPN, (2SC2718)	
Q118	Tr, Si, NPN, (2SC2718)	
Q119	Not assigned	
Q120	Not assigned	
Q121	Not assigned	
Q122	Not assigned	
Q123	Tr, Si, NPN, (2SC2718)	
Q124	Di, Si, (1S953)	
Q125	Di, Si, (1S953)	
Q126	IC, (μPC151C)	
Q127	IC, (74LS00)	
Q128	Tr, Si, NPN, (2SC2718)	
Q129	Tr, Si, NPN, (2SC2718)	
R199	CF, (ARD25T102J)	1kΩ, ±5%, 1/4W
R200	CF, (ARD25T102J)	1kΩ, ±5%, 1/4W
R201	CF, (ARD25T102J)	1kΩ, ±5%, 1/4W
R202	CF, (ARD25T222J)	2.2kΩ, ±5%, 1/4W
R203	CF, (ARD25T470J)	47Ω, ±5%, 1/4W
R204	CF, (ARD25T681J)	680Ω, ±5%, 1/4W
R205	CF, (ARD25T332J)	3.3kΩ, ±5%, 1/4W
R206	CF, (ARD25T101J)	100Ω, ±5%, 1/4W
R207	CF, (ARD25T332J)	3.3kΩ, ±5%, 1/4W
R208	CF, (ARD2ST101J)	100Ω, ±5%, 1/4W
R209	CF, (ARD25T102J)	1kΩ, ±5%, 1/4W
R210	CF, (ARD25T331J)	330Ω, ±5%, 1/4W
R211	CF, (ARD25T221J)	220Ω, ±5%, 1/4W
R212	CF, (ARD25T102J)	1kΩ, ±5%, 1/4W
R213	CF, (ARD25T102J)	1kΩ, ±5%, 1/4W
R214	Not assigned	
R215	Not assigned	

R216	CF, (ARD25T103J)	10kΩ, ±5%, 1/4W
R217	CF, (ARD25T103J)	10kΩ, ±5%, 1/4W
R218	Not assigned	
R219	CF, (ARD25T102J)	1kΩ, ±5%, 1/4W
R220	CF, (ARD25T681J)	680Ω, ±5%, 1/4W
R221	CF, (ARD25T561J)	560Ω, ±5%, 1/4W
R222	CF, (ARD25T222J)	2.2kΩ, ±5%, 1/4W
R223	CF, (ARD25T681J)	680Ω, ±5%, 1/4W
R224	CF, (ARD25T681J)	680Ω, ±5%, 1/4W
R225	CF, (ARD25T222J)	2.2kΩ, ±5%, 1/4W

MP MASTER
MA35819

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